

GENERIC · POWERTRAIN

P2521

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P2521

A/C Request 'A' Circuit High

P2521 means the air conditioning (A/C) request circuit, specifically the 'A' signal, is reading a voltage higher than the manufacturer's expected range when the climate control system is asking for cooling. The powertrain control module (PCM) monitors this circuit to decide when to engage the A/C compressor, and it sets the code when the signal stays above the normal threshold for a calibrated time.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- The A/C may not blow cold air, or the compressor may never engage.
- The A/C button or climate control panel may not respond when pressed.
- The blower fan may still work, but the air stays warm.
- Often no symptoms besides the warning light, especially if the fault is intermittent.
- The PCM may disable the A/C compressor as a fail-safe, causing poor defrost performance in humid weather.

Common causes, most likely first

- A short to voltage on the A/C request signal wire, often from chafed insulation or a pinched harness.
- A faulty A/C pressure switch or sensor that is stuck closed or sending a high-voltage signal.
- A failed climate control module or A/C control head that is outputting an incorrect request signal.
- Corroded or loose electrical connectors at the A/C pressure switch, PCM, or climate control module.
- A shorted A/C compressor clutch coil or diode that back-feeds voltage into the request circuit.
- A PCM internal fault that misreads the request circuit voltage, though this is less common.



How to diagnose and fix it

- 1 Scan all modules for related codes and record freeze-frame data to see when the high voltage was detected.
- 2 Inspect the A/C request circuit wiring and connectors for chafing, corrosion, or loose pins, especially near the compressor and pressure switch.
- 3 Disconnect the A/C pressure switch and measure the signal voltage at the connector; compare to the manufacturer's specification.
- 4 Test the climate control module output with a multimeter or scan tool to confirm whether it is commanding an abnormally high signal.
- 5 Check the A/C compressor clutch coil and diode for a short that could feed voltage back into the request circuit.
- 6 If the circuit and components test good, substitute a known-good PCM only after confirming all other possibilities, then reprogram if required.

Don't replace the climate control head yet

- A shorted A/C compressor clutch diode can back-feed voltage into the request circuit and set P2521 even when the climate control panel is working perfectly.
- Many technicians replace the A/C pressure switch first, but a chafed wire near the compressor or a corroded connector often causes the high-voltage signal.
- P2521 can be stored intermittently by a loose ground at the climate control module, which raises the reference voltage on the request circuit.
- The code does not always mean the A/C system has a mechanical failure; the PCM may simply be seeing an out-of-range electrical signal while the compressor still works.
- On some vehicles, a low refrigerant charge can cause the pressure switch to behave erratically and set a high-voltage request code, so check system pressures before condemning electrical parts.

Can I keep driving with P2521?

You can usually drive the vehicle safely because the PCM will disable the A/C compressor to protect the system, but avoid using the A/C until the fault is repaired. Do not ignore the code if you rely on defrost performance in humid or rainy conditions, as the compressor may not engage.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with back-probing pins
- Wiring diagram for the A/C request circuit
- Test light or jumper wires for circuit testing
- Refrigerant pressure gauge set to verify system pressures



Reading P2521

- P** Powertrain: engine, transmission and emissions.
- 2** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 5** Vehicle speed, idle control and auxiliary inputs.
- 21** The exact fault within that area.

Often seen with

P0532 A/C Refrigerant Pressure Sensor 'A' Circuit Low · **P0533** A/C Refrigerant Pressure Sensor 'A' Circuit High
· **P0645** A/C Clutch Relay Control Circuit · **P2522** A/C Request 'B' Circuit · **P2523** A/C Request 'B' Circuit Low

See it working

Watch the animated explainer [How a Gyroscope Works: Gimbals and Precession](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p2521/>

